

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

**TENTATIVE MONITORING AND REPORTING PROGRAM NO. R9-2003-0265  
FOR NPDES PERMIT NO. CA0107867**

**FOR**

**U.S. NAVY GRAVING DOCK**

**LOCATED AT**

**NAVAL BASE SAN DIEGO**

**SAN DIEGO COUNTY**

**A. PURPOSE**

This monitoring program is intended to:

- a. Document short-term and long-term effects of the discharge on receiving waters, sediments, biota, and beneficial uses of the receiving water;
- b. Determine compliance with National Pollutant Discharge Elimination System (NPDES) permit terms and conditions.
- c. Determine compliance with water quality objectives.
- d. Determine effectiveness of Best Management Practices (BMPs).

**B. MONITORING PROVISIONS**

1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations identified in the Report of Waste Discharge. Other waste streams, body of water or substance shall not dilute the monitored discharge. Monitoring points shall not be changed without notification to, and the approval of, this Regional Board.
2. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved under Title 40, United States Code of Federal Regulations (CFR), Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act* as amended, unless other test procedures are specified in Order No. R9-2003-0265 and/or in this Monitoring and Reporting Program (MRP) and/or by this Regional Board.

3. Monitoring results must be reported on forms approved by this Regional Board. Duplicate copies of the monitoring reports signed and certified as required by *Reporting Requirement F.8* of *Order No. R9-2003-0265* must be submitted to the USEPA and the Regional Board at the addresses listed in *Reporting Requirement F.10* of *Order No. R9-2003-0265*.
4. If the discharger monitors any pollutant more frequently than required by *Order No. R9-2003-0265* or by this Monitoring and Reporting Program, using test procedures approved under 40 CFR Part 136, or as specified in *Order No. R9-2003-0265* or this MRP or by this Regional Board, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the discharger's monitoring report. The increased frequency of monitoring shall also be reported.
5. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by *Order No. R9-2003-0265* and this MRP, and records of all data used to complete the application for *Order No. R9-2003-0265*, for a period of at least five years from the date of the sample, measurement, report, or application. This period may be extended by request of this Regional Board.
6. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The individual(s) who performed the sampling or measurements;
  - c. The date(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The analytical techniques or methods used; and
  - f. The results of such analyses.
7. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in *Order No. R9-2003-0265* or this MRP.
8. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by this Regional Board.
9. The discharger shall report in a cover letter all instances of noncompliance not reported under *Reporting Requirement F.5* of *Order No. R9-2003-0265* at the time monitoring reports are submitted. The reports shall contain the information listed in *Reporting Requirement F.5*.
10. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

11. Monitoring reports must be signed and certified as required by *Reporting Requirement F.8* of Order No. R9-2003-0265 and must be submitted to the USEPA and this Regional Board at the addresses listed in *Reporting Requirement F.10* of Order No. R9-2003-0265. Monitoring results must be reported on forms reviewed by and subject to the approval of this Regional Board.
12. Monitoring results shall be reported at intervals and in a manner specified in Order No. R9-2003-0265 or in this MRP.
13. This MRP may be modified by this Regional Board, as appropriate.

### C. EFFLUENT MONITORING

#### 1. Emergency Fire Suppression Water and Caisson Gate Ballast Water

The sampling stations for each flow of water shall be located at all applicable discharge points, and where samples representative of the discharge can be obtained. Monitoring stations shall be specified in the BMPs Plan and shall not be changed without prior review by this Regional Board.

Monitoring of the emergency fire suppression water and caisson gate ballast water shall be conducted and submitted as specified in *Table 1. Monitoring Requirements for Emergency Fire Suppression Water and Caisson Gate Ballast Water Discharges.*

**Table 1.** Monitoring Requirements for Emergency Fire Suppression Water and Caisson Gate Ballast Water Discharges.

PARAMETER	UNIT	TYPE OF SAMPLE	MINIMUM FREQUENCY
flow	gallons	estimate	annually
Oil & Grease	mg/L	grab	annually <sup>1</sup>
Settleable Solids	ml/L	grab	annually <sup>1</sup>
Turbidity	NTU	grab	annually <sup>1</sup>
pH	units	grab	annually <sup>1</sup>
Temperature	°C	measurement	annually <sup>1</sup>
TSS	µg/L	grab	annually <sup>1</sup>
Arsenic	µg/L	grab	annually <sup>1</sup>

PARAMETER	UNIT	TYPE OF SAMPLE	MINIMUM FREQUENCY
Cadmium	µg/L	grab	annually <sup>1</sup>
Chromium	µg/L	grab	annually <sup>1</sup>
Copper	µg/L	grab	annually <sup>1</sup>
Lead	µg/L	grab	annually <sup>1</sup>
Mercury	µg/L	grab	annually <sup>1</sup>
Nickel	µg/L	grab	annually <sup>1</sup>
Silver	µg/L	grab	annually <sup>1</sup>
Zinc	µg/L	grab	annually <sup>1</sup>
TBT	µg/L	grab	annually <sup>1</sup>
Acute Toxicity <sup>a</sup>	% survival	grab	annually <sup>1</sup>
Chronic Toxicity <sup>b</sup>	TUc	grab	annually <sup>1</sup>
PAH <sup>c</sup> (ug/L)	µg/L	grab	annually <sup>1</sup>
Total Residual Chlorine	µg/L	grab	annually <sup>1</sup>

<sup>1</sup> Monitoring for this parameter shall be conducted annually unless the discharger submits an annual certification, signed by an authorized person as required in Monitoring Provision A.11 of this MRP, that this parameter has not been added to the discharge, and that no change has occurred in activities that could cause this parameter to be present in the discharge.

If the discharger submits such certification, monitoring for this parameter shall be conducted within the first year after the effective date of Order No. R9-2003-0265, and within the period of not more than 12 months and not less than 6 months prior to the expiration date of Order No. R9-2003-0265 (August 13, 2008). Certification shall be submitted no later than January 31 of each year. Monitoring results for this parameter shall be submitted no later than 30 days after sample collection.

## 2. Graving Dock Flood Water

The discharger shall provide written notification to this Regional Board at least 48 hours prior to flooding of the graving dock. If the facility has to be flooded on a short notice and the 48-hour notification requirement can not be met, then the discharger shall notify this Regional Board as early as possible and include information on why the 48-hour notification time could not be met.

The discharger shall record on VHS video tape the condition of its graving dock immediately prior to each flooding. Recordings shall include the initial flooding of the

graving dock. The discharger shall submit the video tapes quarterly to the Regional Board in accordance with *Table 3. Monitoring and Reporting Schedule* of this MRP.

If the graving dock was not flooded during the quarter, the discharger shall document in the quarterly effluent monitoring report that no flooding occurred during that monitoring period.

## **D. STORM WATER MONITORING**

### **1. Non-Storm Water Discharge Visual Observations**

- a. The discharger shall visually observe all drainage areas within its facility for the presence of unauthorized non-storm water discharges.
- b. Visual observations shall document the presence of any discolorations, stains, odors, floating materials, etc., as well as the source of any discharge (if known). Records shall be maintained of the visual observation dates, locations observed, observations, and response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges. The BMPs Program Manual shall be revised, as necessary, and implemented in accordance with Order No. R9-2003-0265.
- c. The visual observations required above shall be conducted at the following frequencies:

For high-risk areas (defined in *Attachment E* of Order No. R9-2003-0265) the discharger shall conduct monthly visual observations during daylight *scheduled facility operating hours*<sup>1</sup>, on days with no discharges of storm water runoff associated with industrial activities.

For all other areas the discharger shall conduct quarterly visual observations during daylight scheduled facility operating hours, on days with no discharges of storm water runoff associated with industrial activities. Quarterly visual observations shall be conducted in each of the following periods: January-March, April-June, July-September, and October-December. The discharger shall conduct quarterly visual observations within 6-18 weeks of each other.

---

<sup>1</sup>*Scheduled facility operating hours* are the time periods when the facility is staffed to conduct any function related to industrial activity, but excluding time periods where only routine maintenance, emergency response, security, and/or janitorial services are performed.

## 2. Storm Water Discharge Visual Observations

- a. Visual observations are required of all discharges of storm water runoff associated with industrial activity occurring during daylight hours that are preceded by at least seven days without a storm water discharge.
- b. Visual observations shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and source of any pollutants. Records shall be maintained of observation dates, locations observed, observations, and response taken to reduce or prevent pollutants in discharges. The BMPs Program Manual shall be revised, as necessary, and implemented in accordance with Order No. R9-2003-0265.
- c. Storm water discharge visual observations shall be conducted at the following frequencies:

For high-risk areas the discharger shall conduct visual observations of discharges of storm water runoff associated with industrial activity, during each storm event. These visual observations shall occur during the first hour of discharge and at all discharge locations. Visual observations of stored or contained storm water shall occur at the time of release.

For all other areas, the discharger shall conduct visual observations of discharges of storm water runoff associated with industrial activity during one storm event per month during the wet season (October 1-May 30). These visual observations shall occur during the first hour of discharge and at all discharge locations. Visual observations of stored or contained storm water shall occur at the time of release.

## 3. Sampling and Analysis

- a. The discharger shall collect storm water samples during the first hour of discharge from
  - i. the first storm of the wet season that produces discharges, and
  - ii. at least one other storm in the wet season that produces discharges (even if the sample is not taken during the first hour of the discharge).

All storm water discharge locations shall be sampled. Sampling of stored or contained storm water shall occur at the time the stored or contained storm water is released. If a sample is not collected from the first storm of the wet season that produces discharges, the discharger is still required to collect samples from two other storms of the wet season that produces discharges. The discharger shall explain in the Storm Water Annual Report why the first storm that produces discharges was not sampled. If a sample cannot be taken during the first hour of a discharge, the discharger shall explain why the samples could not be taken during this period of time.

- b. Samples shall be collected from discharges of storm water that are preceded by at least seven days without storm water discharge.
- c. The samples shall be analyzed according to *Table 2. Monitoring Requirements for Industrial Storm Water Discharges.*

**Table 2.** Monitoring Requirements for Industrial Storm Water Discharges.

PARAMETER	UNIT <sup>1</sup>	TYPE OF SAMPLE	MINIMUM FREQUENCY
Volume of Discharge	gallons	estimate <sup>2</sup>	2 storms per year
Total Petroleum Hydrocarbons (TPH)	mg/L	Grab	2 storms per year
TSS	mg/L	Grab	2 storms per year
Settleable Solids	ml/L	Grab	2 storms per year
pH	pH Units	Grab	2 storms per year
Arsenic	µg/L	Grab	2 storms per year
Cadmium	µg/L	Grab	2 storms per year
Chromium	µg/L	Grab	2 storms per year
Copper	µg/L	Grab	2 storms per year
Lead	µg/L	Grab	2 storms per year
Mercury	µg/L	Grab	2 storms per year
Nickel	µg/L	Grab	2 storms per year
Silver	µg/L	Grab	2 storms per year
Zinc	µg/L	Grab	2 storms per year
Chemical Oxygen Demand (COD)	mg/L	Grab	2 storms per year
TBT	µg/L	Grab	2 storms per year
Acute Toxicity <sup>3</sup>	% survival	Grab	1 storm per year
Chronic Toxicity <sup>4</sup>	TUc	Grab	1 storm per year
Oil & Grease	mg/L	Grab	2 storms per year
Total Organic Carbon (TOC)	mg/L	Grab	2 storms per year

PARAMETER	UNIT <sup>1</sup>	TYPE OF SAMPLE	MINIMUM FREQUENCY
Specific Conductance	µmho/cm	Measurement	2 storms per year

<sup>1</sup>Unit: mg/L = milligrams per liter

ml/L = milliliters per liter

µg/L = micrograms per liter

µmho = micromhos per centimeter

<sup>2</sup> The volume of storm water discharge can be estimated by multiplying: amount of rainfall in feet X square feet of surface area X impervious factor. There are 7.5 gallons per cubic foot.

<sup>3</sup> The presence of acute toxicity in the storm water shall be determined as specified in *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms* (EPA 600/4-90-027F, August 1993 or subsequent editions). Dischargers shall conduct an annual acute toxicity test on a sample of storm water. Dischargers shall conduct a 96-hour static-renewal test with the vertebrate *Menidia beryllina*, or the invertebrate *Mysidopsis bahia*. The acute toxicity testing shall be a 96-hour static renewal test conducted on a sample of 100% storm water and a laboratory control. Use of two laboratory controls, a receiving water control, and a synthetic laboratory seawater control, is highly recommended. The salinity of the sample should be adjusted to the salinity level typical of the receiving water using dry sea salt. The adjusted salinity level shall be reported. The storm water tests shall be conducted with concurrent reference toxicant tests. Both the reference toxicant and the storm water test shall meet all test acceptability criteria as specified in the above named manual. If the test acceptability criteria are not achieved, the discharger shall re-sample and re-test by the next storm.

#### 4. Storm Water Discharge Sampling Locations

- a. The discharger shall visually observe and collect samples of storm water discharges from all drainage areas. The storm water discharge collected and observed shall be representative of the storm water discharge in each drainage area.
- b. The discharger shall identify alternate visual observation and sample collection locations if the facility's drainage areas are affected by storm water run-on from surrounding areas. The storm water discharge collected and observed shall be representative of the facility's storm water discharge in each drainage area.
- c. If visual observation and sample collection locations are difficult to observe or sample (e.g., sheet flow, and submerged discharge outlets), the discharger may identify other alternative locations representative of the facility's storm water discharges.
- d. If the discharger determines and documents within its annual report that the industrial activities and BMP within two or more drainage areas are substantially identical, the discharger may either:
  - i. Collect samples from a reduced number of substantially identical drainage areas; or
  - ii. Collect samples from each substantially identical drainage area and analyze a combined sample. The combined sample shall consist of equal volumes of sample collected from each substantially identical drainage area.



## 5. Visual Observation and Sample Collection Exceptions

The discharger shall be prepared to collect samples and conduct visual observations at the beginning and throughout the wet season (October 1 through May 31) until the minimum requirements of *Section 2. Storm Water Discharge Visual Observations*, and *Section 3. Sampling and Analysis* are completed with the following exceptions:

- a. The discharger is not required to collect samples or conduct visual observations under the following conditions:
  - i. During dangerous weather conditions such as flooding and electrical storms;
  - ii. Outside of scheduled facility operating hours; or
  - iii. When a storm event in the proceeding seven days produced a storm water discharge.
- b. If the discharger does not collect the required samples or conduct the visual observations during a wet season due to these exceptions, then the discharger shall include an explanation in the Annual Report why the sampling or visual observations were not conducted.
- c. The discharger may conduct visual observations and sample collection more than one hour after discharge begins if the discharger determines that the storm water discharge will be more representative of the facility's storm water discharge. The discharger shall include a technical justification in the Annual Report explaining why the visual observations and sample collection should be conducted after the first hour of discharge.
- d. After January 1, the discharger must collect samples, if a rain event produces runoff, to fulfill the 2-storm sampling requirement during scheduled facility operating, even if the sampling does not occur during the first hour of runoff. The discharger must report the time the discharge began and the time the sample was taken.

## 6. Monitoring Methods

- a. All sampling and sample preservation shall be in accordance with the current edition of *Standard Methods for the Examination of Water and Wastewater* (American Public Health Association). All monitoring instruments and equipment (including the dischargers' own field instruments for measuring pH and specific conductance) shall be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. All laboratory analyses shall be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this Order or by this Regional Board. All metals shall be reported as total

metals. With the exception of analysis conducted by the discharger, all laboratory analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The discharger may conduct their own sample analyses if the discharger has sufficient capability (qualified employees, laboratory equipment, etc.) to adequately perform the test procedures.

- b. Samples shall be analyzed for copper according to method 1638 or 1640. The commonly used methods 6010B (Inorganics by ICP-Atomic Emission Spectroscopy) and 200.7 (Trace Elements-ICP) have been found to give inaccurate copper readings in saline-matrix samples due to interference with the sodium-argon complex, which has a molecular weight similar to copper. Method 1638 (ICP/MS) or 1640 (On-Line Chelation) will eliminate the sodium-argon complex before the sample is tested for copper. No inaccurate readings for other metals in a saline-matrix sample analyzed by methods 6010B or 200.7 are known.

## 7. Records

Records of all storm water monitoring information and copies of all reports required by Order No. R9-2003-0265 or this MRP shall be retained for a period of at least five years. These records shall include:

- a. The date, place, and time of site inspections, sampling, visual observations, and/or measurements;
- b. The individual(s) who performed the site inspections, sampling, visual observations, and or measurements;
- c. Flow estimates;
- d. The date and approximate time of analyses;
- e. The individual(s) who performed the analyses;
- f. Analytical results, method detection limits, and the analytical techniques or methods used;
- g. Quality assurance/quality control records and results;
- h. Non-storm water discharge inspections visual observations and storm water discharge visual observation records (Sections D.1. and D.2.);
- i. Visual observation and sample collection exception records (Section D.5.)
- j. All calibration and maintenance records of on-site instruments used; and
- k. The records of any corrective actions and follow-up activities that resulted from the visual observations.

## 8. Storm Water Annual Report

The discharger shall submit a *Storm Water Annual Report* by September 1 of each year to this Regional Board. The report shall include the following:

- a. A summary of visual observations and sampling results;
- b. An evaluation of the visual observations and sampling and analysis results;
- c. Laboratory reports;
- d. The Annual Comprehensive Site Compliance Evaluation Report required by Order No. R9-2003-0265;
- e. An explanation of why the facility did not implement any activities required by Order No. 98-53 (if not already included in the Evaluation Report); and
- f. Records specified in *Section D*.

The method detection limit of each analytical parameter shall be included. Analytical results that are less than the method detection limit shall be reported as *less than the method detection limit*. The Annual Report shall be signed and certified in accordance with *Reporting Requirement F.8* of Order No. R9-2003-0265. The discharger shall prepare and submit the Storm Water Annual Reports using the annual report forms provided by the State Board or this Regional Board or shall submit their information on a form that contains equivalent information.

#### 9. Additional Monitoring

Based on a review of the BMP Program Manual and the annual report, this Regional Board may direct the discharger to monitor at different and/or additional storm water discharge points.

### **E. MONITORING FOR THE IMPLEMENTATION POLICY**

1. **Priority Pollutants:** In order to comply with the Implementation Policy, the discharger shall monitor the following discharges (a representative sample may be taken for discharges with multiple discharge locations) and the receiving waters for the priority pollutants listed in *Appendix A* prior to August 1, 2004 and submit the results to this Regional Board no later than January 1, 2005:
  - a. Emergency Fire Suppression Water; and
  - b. Caisson Gate Ballast Water.
2. **Dioxin and Congeners:** The Discharger shall monitor the discharges listed above and the receiving waters for the *17 congeners 2,3,7,8-TCDD* listed in the *Implementation Policy* once during wet weather and once during dry weather and submit the results to this Regional Board with its first or second annual report.
3. **Reporting:** The monitoring results shall be reported as specified in Section 2.4.4 of the Implementation Policy, which is included in *Appendix A*.

## F. MONITORING REPORT SCHEDULE

Monitoring reports shall be submitted to this Regional Board according to the dates in the schedule in *Table 3. Monitoring and Reporting Schedule*.

**Table 3.** Monitoring and Reporting Schedule.

Reporting Frequency	Report Period	Report Due
Monthly	Each month	By the first day of the second month after the month of sampling
Quarterly	January through March	May 1
Quarterly	April through June	August 1
Quarterly	July through September	November 1
Quarterly	October through December	February 1
Annually	January through December	March 1
Annual storm water monitoring	July 1 through June 30	August 1
Instances of noncompliance	per <i>Monitoring Provision B.9</i> , page M-2	As specified in <i>Monitoring Provision B.9</i> , page M-2
Appendix A Priority Pollutants	August 13, 2003 through June 30, 2004	August 1, 2004
2,3,7,8-TCDD and congeners	August 13, 2003 through June 30, 2005	August 1, 2004, or August 1, 2005

## G. COMPLIANCE CERTIFICATION

The discharger shall submit a report certifying either compliance or noncompliance with all requirements and conditions of Order No. R9-2003-0265. The certification shall be signed by an authorized person as required in *Reporting Requirements F.8* of Order No. R9-2003-0265, and shall be submitted monthly to this Regional Board in accordance with *Table 3. Monitoring and Reporting Schedule* of this MRP.

## H. SPILL AND ILLICIT DISCHARGE LOG

The discharger shall log and report all spills and illicit discharges within and from the graving dock facility which occur during each quarter. The spill and illicit discharge reports shall identify:

- the time and date of the spill or illicit discharge;
- the cause of the spill or illicit discharge;
- the materials or wastes involved in the spill or illicit discharge,

- d. the estimated volume of the spill or illicit discharge;
- e. the specific location where the spill or illicit discharge originated;
- f. the fate of the spill or illicit discharge (e.g., San Diego Bay, graving dock, etc.);
- g. the physical extent or size of the problem area(s);
- h. whether the spill or illicit discharge contained pollutants;
- i. the public agencies notified;
- j. the corrective actions taken; and
- k. the means to prevent or minimize future spills or illicit discharges.

The reports shall be signed by an authorized person, as required in *Reporting Requirements F.8* of Order No.R9-2003-0265, and shall be submitted quarterly to this Regional Board in accordance with *Table 3. Monitoring and Reporting Schedule* of this MRP.

The discharger shall include in its annual effluent report a summary of the spills and illicit discharges which occurred within or from the graving dock site. The spill and illicit discharge summary report shall indicate the total number of spills and illicit discharges for the year, categorize the spills and illicit discharges, and provide the percentages of each type of spill or illicit discharge in a graphical representation. The summary report shall also describe the efforts the discharger used in the year to prevent or minimize spills.

#### **I. CHEMICAL UTILIZATION AUDIT**

The discharger shall submit a complete Chemical Utilization Audit form to summarize the use of hazardous materials and wastes generated. The form shall be signed by an authorized person as required in *Reporting Requirements F.8* of Order No.R9-2003-0265, and shall be submitted annually to this Regional Board in accordance with *Table 3. Monitoring and Reporting Schedule* of this MRP.

#### **J. WASTE HAULING LOG**

The discharger shall submit a log showing the volume, type, disposition, and date of disposal for all wastes originating from ship construction, modification, repair, and maintenance facilities and activities during each month. The log shall be signed by an authorized person as required in *Reporting Requirements F.8* of Order No.R9-2003-0265, and shall be submitted semiannually to this Regional Board in accordance with *Table 3. Monitoring and Reporting Schedule* of this MRP.

## **K. SEDIMENT MONITORING**

### **1. Sample Collection**

- a. The sediment sampling program shall consist entirely of surficial sediment samples, and shall be conducted by the discharger at the stations within its leasehold, as specified in *Sediment Monitoring Station Locations, N.*, of this MRP.
- b. A minimum of one sample shall be collected from each designated station on an annual basis. Each sample shall consist of three replicates (jars of sediment) to be composited in the laboratory prior to analysis. Samples shall not be discarded after analysis. All samples shall be frozen and retained for a period of no less than 45 days from the date on which this Regional Board received the corresponding analytical results. This Regional Board shall notify the discharger when the samples can be discarded.
- c. Surficial sediment samples shall be collected by grab. Grab samples shall be collected with a 0.1 m<sup>2</sup> modified van Veen grab. The grab sampler shall be galvanized, stainless steel, or Teflon-coated. All surfaces of the grab shall be clean and free of rust. Grab sample collection procedures shall be consistent with appropriate methods, including the criteria for acceptable grab samples specified in the Southern California Coastal Water Research Project (SCCWRP) Field Methods Manual. The subsample to be analyzed, shall be taken from the top 2-3 cm of undisturbed grab sample. Detailed field protocol is provided in EPA's guidance documents 430/9-86-004 and 430/9-82-010, or in the SCCWRP Field Methods Manual cited above.

### **2. Sample Collection Plan**

Samples shall be collected in accordance with the *Sample Collection Plan* that was submitted and approved pursuant to Order No. 98-53. Any proposed changes to the Sample Collection Plan shall be submitted to this Regional Board for review no later than August 30 of the year in which the changes are proposed to take effect.

If the discharger proposes change to the *Sample Collection Plan*, the following items must be included:

- a. Narrative Descriptions: A detailed narrative description of each station location including distances from permanent key landmarks shall be developed and confirmed in the field.
- b. Photographs: Each station shall be marked (if feasible) and photographed. A minimum of two photos shall be taken to show the location of each station relative to the key landmarks which will be used to relocate it (e.g., storm drain outlet, corner of graving dock, etc).

- c. Station Coordinates: The discharger shall convert the station coordinates from the Lambert coordinate grid system (i.e., Easting and Northing) into Latitude and Longitude coordinates. All station coordinates shall be confirmed in the field or corrected.
- d. Facility and Reference Station Maps: Accurate facility and reference station maps shall be developed and confirmed in the field. All maps shall be drawn to a scale of 1"=50' or 1"=100' overlain on a Latitude/Longitude coordinate grid system. In addition to the monitoring stations, the maps shall show only pertinent details such as structures, storm drains, and work areas. A mylar master is recommended, photocopies may be submitted.

The final Sample Collection Plan and shall remain unchanged from station to station and year to year.

If over the course of the monitoring program, conditions at a particular station are encountered which render collection of samples by grab dangerous or impractical, the discharger may use in its place another of the approved methods/samplers (e.g. Ekman or diver). If possible, substitutions should be approved in advance by this Regional Board.

When substitutions are necessary, the corresponding Discharge Monitoring Reports shall specify the station(s) involved and the substitute method/sampler employed.

After confirmation (of facility maps, narrative description, and coordinates), monitoring stations may be permanently marked for faster and more accurate station positioning.

### 3. Sampling Stations and Analysis

The general guidelines listed in *Table 4. Station Location General Guidelines* shall apply, unless otherwise specified in this MRP.

**Table 4.** Station Location General Guidelines.

STATIONS ADJACENT TO:	SAMPLE COLLECTION
PIERS/ FLOATS/ DOCKS/ GRAVING DOCK/ QUAY WALLS	<p>Samples shall be taken immediately below the edge of a pier float, dock, graving dock, or quay wall and shall be collected by 0.1 m<sup>2</sup> modified van Veen dredge deployed from a boat or the side of the pier,float, dock, graving dock, or quay wall.</p> <p>When a float and quay wall or pier are present side-by-side, samples should be taken below</p>

STATIONS ADJACENT TO:	SAMPLE COLLECTION
	the outside (or bay-side) edge of the float (rather than between the float and quay wall or under the float).
RIP RAP	Samples should be collected 5 feet further from shore than where the rip rap first meets the soft bottom sediment. (In some cases, 10 feet may be specified.)
STORM DRAINS	Storm drain samples of bay sediment should be collected at a point approximately 10 feet from the mouth of the drain and in line with the centerline of the drain unless otherwise specified in this MRP.
BEACH	The narrative descriptions will indicate the distance that a station is located relative to a stationary landmark, such as a pier or other nearby structure.
DOCK/RIP RAP INTERSECTION	Follow guidelines for rip rap station.
DOCK/BEACH INTERSECTION	Follow guidelines for beach station.

The three remote reference stations are common to all dischargers. The discharger may fulfill its sampling requirements for the remote reference stations by submitting results from samples collected at these stations by other entities during the sampling/reporting period. Reference station locations are specified in *Sediment Monitoring Station Locations, N.* of this MRP.

It is the discharger's responsibility to request and obtain permission from the appropriate party or parties prior to sample collection at each of the three reference stations.

#### 4. Analysis Parameters and Detection Limits

Sample analyses shall be conducted using approved laboratory methods capable of meeting the detection limits shown in *Table 5. Sediment Chemistry Methods and Detection Limits.*



**Table 5.** Sediment Chemistry Methods and Detection Limits.

PARAMETER	METHOD NUMBER	DETECTION LIMIT (dry weight)
grain size	--	NA
Cadmium, Chromium, Copper, Nickel, Silver <sup>1</sup>	6010	0.5 mg/kg
Mercury <sup>1</sup>	7471	0.1 mg/kg
Arsenic <sup>1</sup>	7060 or 7061	0.5 mg/kg
Lead <sup>1</sup>	7421	0.5 mg/kg
Zinc <sup>1</sup>	6010	2.0 mg/kg
Tributyltin (TBT) <sup>2</sup>	See Footnote 2	1.0 ug/kg
Total Petroleum Hydrocarbons (TPH) <sup>3</sup>	Modified 8015 or DHS	500. ug/kg
Polychlorinated biphenyls/ Polychlorinated terphenyls (PCBs/PCTs) <sup>4</sup>	8080	20.0 ug/kg
PAH <sup>5</sup>	8270	100. ug/kg

<sup>1</sup> Metals

Trace metal analysis shall include the individual concentrations of arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc. Method 3050 shall be used in preparation for all metal analyses except mercury. Preparation procedures for mercury are included in method 7471.

<sup>2</sup> Tributyltin (TBT)

Concentrations of Tributyltin shall be analyzed using protocol approved by this Regional Board or as described in:

Stephenson, M.D., and D.R. Smith. 1988. Determination of Tributyltin in Tissues and Sediments by Graphite Furnace Atomic Absorption Spectrometry. Analytical Chemistry, Vol.60, No. 7. pp. 696-698; or

Stallard M.O., and S.Y. Cola. 1989. Optimization of Butyltin Measurements for Seawater, Tissue, and Marine Sediment Samples. Applied Organometallic Chemistry 3:105-114; or

Unger, M.A. et al. 1986. GC Determination of Butyltin in Natural Waters by Flame Photometric Detection of Hexyl Derivatives with Mass Spectrometric Confirmation. Chemosphere, Volume 15, Number 4. p. 461.

<sup>3</sup> Total Petroleum Hydrocarbons, nC<sub>12</sub> - nC<sub>32</sub>

Using gas chromatography, analyze for the medium molecular weight hydrocarbons, boiling point range nC<sub>12</sub>- nC<sub>32</sub>. Separate the two resulting fractions, specifying the concentrations of (1) saturated aliphatic hydrocarbons; (2) unsaturated aromatic hydrocarbons; and their sum, the Total Petroleum Hydrocarbons. The concentrations of the remaining monitored contaminants, PCBs, PCTs, and PAHs, can be determined by further analysis of these two fractions.

TOTAL PETROLEUM HYDROCARBONS	
Aliphatic	Aromatic
PCBs/PCTs	PAHs

<sup>4</sup> PCBs/PCTs

Analyze the saturated aliphatic fraction for PCBs and PCTs, both of which can be measured in a single procedure. Run the PCB analysis as usual but include one additional standard for Aroclor 5460. At approximately 40 minutes, increase the temperature to 285 degrees celsius. PCTs elute later than PCBs and the entire procedure will take approximately 90 minutes.

Report the concentration of Total PCBs, indicating the name and degradation status of the predominant aroclor (e.g., Aroclor 1260, undegraded). The name and status of a secondary PCB aroclor shall also be reported, if present. Similarly, specify the concentration of Total PCTs assumed to be Aroclor 5460. Report the presence of any unidentified mixture of chlorinated hydrocarbons detected by electron capture gas chromatography. Additional PCB/PCT information, such as the concentrations of individual congeners, should also be provided if available without additional analytical costs.

<sup>5</sup> Polynuclear Aromatic Hydrocarbons (PAHs)

The concentrations of the individual PAHs can be determined by further analysis of the unsaturated aromatic fraction. The concentrations of the following eight PAHs shall be reported: Phenanthrene, 1-Methyl Phenanthrene, 2-Methyl Phenanthrene, Benzo(a)pyrene, Chrysene, Fluoranthene, Pyrene, and Anthracene.

Additional information, such as the concentration of other PAHs, should also be provided if available without additional analytical costs.

<sup>6</sup> Total Organic Carbon

Although not initially required, composited sediment from each sample shall be retained for possible future Total Organic Carbon (TOC) analysis. All samples shall be frozen and retained for a period of no less than 45 days from the date on which this Regional Board received the corresponding analytical results. At that time, this Regional Board shall be notified and approval to discard the samples shall be obtained, before the samples are discarded.

## L. MONITORING RESULTS AND REPORTS

## 1. Discharge Monitoring Reports

Monitoring results must be reported on Discharge Monitoring Report forms. Discharge Monitoring Report forms shall be submitted to this Regional Board on a 3.5 inch DOS-formatted, double sided, high density diskette or on CD-ROM in IBM Microsoft Word 98 or older format, and in hard copy form.

Each Discharge Monitoring Report shall contain all required sampling results in the following three forms:

- a. Tables:

Current, as well as historical, monitoring data shall be provided in tabular form. Historical monitoring data is defined as sample results from all previous reporting periods collected as a part of this MRP. All concentrations shall be reported in both dry and wet weights. Tabular data shall be submitted on a 3.5 inch DOS-formatted, double sided, high-density diskette or CD-ROM in Microsoft Excel 98 or older format, and in hard copy form.

b.      Graphs:

The specific type of graph(s) to be generated (e.g., histogram) is not specified, but left to the discretion of the discharger's consultant who should determine the most effective way of presenting the data. Graphical data shall be submitted on a 3.5 inch DOS-formatted, double sided, high-density diskette in Microsoft Excel 98 or older format, and in hard copy form.

c.      Facility and Reference Station Maps

The facility and reference station maps developed for the final Sample Collection Plan and confirmed during the *pre-sampling field* effort shall be used to present the monitoring data. A separate facility and reference station map shall be developed for each monitored contaminant or contaminant group indicating the measured concentrations at each station (rather than concentration contours).

d.      Paint Chip Analyses

In addition to tables, graphs, and maps, Graving Dock Discharge Monitoring Reports must also include the results of the annual paint chip analyses.

2.      Trend Curves and Statistical Analysis

The discharger shall submit annual *trend curves* for each monitored constituent, in which concentrations are plotted as a function of time. The discharger shall also determine if a statistically significant change (increase or decrease) in sediment concentrations has occurred over time for each contaminant, relative to reference concentrations.

In making this determination, the discharger shall employ a statistical method that is best suited for the data available (i.e parameteric or non-parametric).

In all cases, the discharger shall report as soon as possible the cause(s) or suspected cause(s) of any increase in contaminant concentrations, if they are known.

Monitoring results shall be compared against the following three sets of reference data:

- a.    The discharger's own historical baseline data (historical data is defined as sample results from all previous sampling/reporting periods collected as a part of this Sediment MRP);

- b. Concentrations measured at the three remote reference sites;
- c. Concentrations measured at nearby city storm drain(s), if present.

**M. SEDIMENT MONITORING SUSPENSION**

1. Sediment monitoring required by this MRP may be suspended for a period not to exceed two years when all of the following conditions have been met:
  - a. This Regional Board has issued an enforceable time schedule for cleanup of contaminated Bay sediment from within and/or adjacent to the graving dock site; and
  - b. The discharger has developed a sediment cleanup plan acceptable to this Regional Board and has agreed to implement that plan in accordance with this Regional Board's time schedule.
2. The sediment monitoring program required by this MRP shall be resumed no later than the earliest date when any of the following have occurred:
  - a. The discharger is not in compliance with this Regional Board's time schedule.
  - b. Two years have elapsed from the effective date of this Regional Board's time schedule for sediment cleanup; or
  - c. This Regional Board directs resumption of the sediment monitoring program.

**N. SEDIMENT MONITORING STATION LOCATIONS**

1. Surficial sediment samples shall be collected in accordance with the *Table 6. Sediment Monitoring Station Locations (Lambert/California Coordinates)*:

**Table 6.** Sediment Monitoring Station Locations (Lambert/California Coordinates)

Station Number	Easting	Northing	Indicators Only <sup>1</sup>	Full Analysis <sup>2</sup>	Paint Chips <sup>3</sup>
GVD-S01	1730965	187785	X		
GVD-S02	1730000	186990	X		
GVD-S03	1730610	187365		X	X
GVD-S04 <sup>4</sup>	1731055	187650		X	X
GVD-S05 <sup>5</sup>	1731130	187710		X	X
GVD-S06 <sup>6</sup>	1730985	187290	X		

Station Number	Easting	Northing	Indicators Only <sup>1</sup>	Full Analysis <sup>2</sup>	Paint Chips <sup>3</sup>
STD-GVD-S01 <sup>7</sup>	1731290	187380		X	X

<sup>1</sup> Indicators Only Analysis

Grain Size

Trace Metals

Tributyltin (TBT)

<sup>2</sup> Full Analysis

Grain Size

Trace Metals

Tributyltin (TBT)

Total Petroleum Hydrocarbons (TPH)

Polychlorinated Biphenyls/Terphenyls (PCBs/PCTs)

Polynuclear Aromatic Hydrocarbons (PAHs)

<sup>3</sup> Paint Chip Analysis

For each analysis, paint chips shall be extracted from a total of approximately 9 liters of sediment; 3 liters from each of three discharger stations.

In the laboratory, the sediment shall be sieved using a screen size just large enough to allow the sediment to pass but not the paint chips. Do not exceed a maximum screen size of 16 openings per inch (openings are approximately 1/16th of an inch). The remaining debris shall then be sorted by hand to remove paint chips. After removal, the paint chips shall be photographed, quantified, and analyzed for metals and TBT.

If paint chips are present, three separate analyses shall be conducted annually. Each analysis will be conducted on paint chips extracted from three stations or replicates; the first analysis will use paint chips extracted from the three discharger stations indicated and the second analysis shall use paint chips from the three remote reference stations. The third analysis shall be conducted on three replicates taken from a single storm drain station.

<sup>4</sup> Sampling station GVD-SO4 is outside the Graving Dock at the main pump outfall.

<sup>5</sup> Station GVD-S05 samples shall be taken from the sediment inside the Graving Dock at the bottom of the main sump. Three replicates of sump sediment shall be collected and composited in the laboratory prior to analysis.

<sup>6</sup> Station GVD-S06 is located approximately mid-channel between Piers 5 and 6, approximately 1/4 of the distance from the quay wall to the end of piers, and between the south edge of the caisson and storm drain station STD-GVD-01.

<sup>7</sup> The sampling station STD-GVD-01 fronts the city storm drain.

---

Surficial sediment samples shall be collected from the three reference stations identified in *Table 7. Reference Station Sampling Site Coordinates (Lambert/California Coordinates)*.

**Table 7.** Reference Station Sampling Site Coordinates (Lambert/California Coordinates).

Station Number	Easting	Northing	Indicators Only <sup>1</sup>	Full Analysis <sup>2</sup>	Paint Chips <sup>3</sup>
REF-01	1697300	196600		X	X
REF-02	1706085	204810		X	X
REF-03	1715225	201110		X	X

<sup>1</sup> Indicators Only Analysis (see Table 6. above)

<sup>2</sup> Full Analysis (see Table 6. above)

<sup>3</sup> Paint Chip Analysis(see Table 6. above)

## O. ENDNOTES REFERENCES

1. A grab sample is defined as an individual sample of at least 100 milliliters collected over a period not exceeding 15 minutes. Grab samples shall be collected over a shorter period if necessary to ensure that the constituent/parameter concentration in the sample is the same as that at the sampling location at the time the sample is collected.

<sup>a</sup> The presence of acute toxicity shall be determined as specified in *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms* (EPA 600/4-90-027F, August 1993 or subsequent editions). Dischargers shall conduct a 96 hour static-renewal test with the vertebrate Menidia beryllina, or the invertebrate Mysidopsis bahia. The acute toxicity testing shall be a 96-hour static renewal test conducted on a sample of 100% effluent and a laboratory control. Use of two laboratory controls, a receiving water control, and a synthetic laboratory seawater control, is highly recommended. The salinity of the sample should be adjusted to the salinity level typical of the receiving water using dry sea salt. The adjusted salinity level shall be reported. The effluent tests shall be conducted with concurrent reference toxicant tests. Both the reference toxicant and the effluent test shall meet all test acceptability criteria as specified in the above named manual. If the test acceptability criteria are not achieved, the discharger shall re-sample and re-test.

<sup>b</sup> The presence of chronic toxicity shall be determined as specified in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA/600/4-87/028, 1988) and/or *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95-136). Dischargers shall conduct a 7-day survival and larval growth test on Menidia beryllina or a 7-day survival, growth/fecundity test on Mysidopsis bahia. Since the test methods provide for an acute/chronic dual endpoint, the discharger may use the same test species as is used for the acute toxicity test. The chronic toxicity testing shall be a 7 day static renewal test on a sample of 100% effluent and a laboratory control. Use of two laboratory controls, a receiving

water control, and a synthetic laboratory seawater control, is highly recommended. The salinity of the sample should be adjusted to the salinity level typical of the receiving water using dry sea salt. The adjusted salinity level shall be reported. The effluent tests shall be conducted with concurrent reference toxicant tests. Both the reference toxicant and the effluent test shall meet all test acceptability criteria as specified in the above named manual. If the test acceptability criteria are not achieved, the discharger shall re-sample and re-test.

- <sup>c</sup> PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(ah)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene.
- <sup>d</sup> If one type of flow of water (waste stream) is combined with one or more other types of waste streams prior to discharge, the discharger shall monitor the combined discharge at the highest monitoring frequency required for any individual waste stream which is part of the combined discharge. The discharger's monitoring reports shall indicate which types of waste streams were combined.

*Ordered by:* \_\_\_\_\_tentative\_\_\_\_\_  
JOHN H. ROBERTUS  
Executive Officer

Date: August 13, 2003

# **Appendix A**

## **Monitoring Information for Compliance With**

**Policy for the Implementation of Toxics  
Standards for Inland Surface Waters,  
Enclosed bays, and Estuaries of California**

**(Phase 1 of the Inland Surface waters Plan  
and the Enclosed Bays and Estuaries Plan)**

**2000**



# REQUIREMENT FOR MONITORING OF PRIORITY POLLUTANTS REGULATED IN THE CALIFORNIA TOXICS RULE

In accordance with the *State Implementation Policy*, the discharger must submit data to the San Diego Regional Water Quality Control Board to: (1) determine if water-quality based effluent limitations for priority pollutants are required; and (2) to calculate effluent limitations, if required. **The submitted data must include the following items:**

- the concentration of each priority pollutant (Table 1. 40 CFR 131.38 Priority Pollutants) in the effluent at the point of discharge;
- the concentration of each priority pollutant (Table 1. 40 CFR 131.38 Priority Pollutants) in the receiving water upstream of the point of discharge;
- the flow rate of the receiving water at the time of sampling (if discharge is to a river or creek);
- the pH of the effluent;
- the pH of the receiving water;
- the hardness of the receiving waters (fresh waters);
- the salinity of the receiving water (marine waters); and
- 2,3,7,8-TCDD and congeners (Table 3) must be analyzed and submitted according to the Implementation Policy.

Upon the Regional Board's evaluation of the submitted data, further monitoring of any or all of the priority pollutants may be required.

SWRCB-approved laboratory methods and the corresponding minimum levels (MLs) for the examination of each priority pollutant are listed in Tables 2a, 2b, 2c, and 2d of this Appendix. Reporting requirements for the data to be submitted are listed in this Appendix.

**Table 1. 40 CFR 131.38 – Priority Pollutants**

Compound	Concentration (µg/L)
Antimony	
Arsenic	
Beryllium	
Cadmium	
Chromium (III)	
Chromium (VI)	
Copper	
Lead	
Mercury	
Nickel	
Selenium	
Silver	
Thallium	
Zinc	
Cyanide	

Compound	Concentration (µg/L)
Asbestos	
2,3,7,8-TCDD (Dioxin)	
Acrolein	
Acrylonitrile	
Benzene	
Bromoform	
Carbon Tetrachloride	
Chlorobenzene	
Chlorodibromomethane	
Chloroethane	
2-Chloroethylvinyl Ether	
Chloroform	
Dichlorobromomethane	
1,1-Dichloroethane	
1,2-Dichloroethane	
1,1-Dichloroethylene	
1,2-Dichloropropane	

Compound	Concentration (µg/L)
1,3-Dichloropropylene	
Ethylbenzene	
Methyl Bromide	
Methyl Chloride	
Methylene Chloride	
1,1,2,2-Tetrachloroethane	
Tetrachloroethylene	
Toluene	
1,2-t-Dichloroethylene	
1,1,1-Trichloroethane	
1,1,2-Trichloroethane	
Trichloroethylene	
Vinyl Chloride	
2-Chlorophenol	
2,4-Dichlorophenol	
2,4-Dimehtylphenol	
2-Methyl-4,6-Dinitrophenol	
2,4-Dinitrophenol	
2-Nitrophenol	
4-Nitrophenol	
3-Methyl-4-Chlorophenol	
Pentachlorophenol	
Phenol	
2,4,6-Trichlorophenol	
Acenaphthene	
Acenaphthylene	
Anthracene	
Benzidine	
Benzo(a)Anthracene	
Benzo(a)Pyrene	
Benzo(b)Fluoranthene	
Benzo(ghi)Perylene	
Benzo(k)luoranthene	
Bis(2-Chloroethoxy)Methane	
Bis(2-Chloroethyl)Ether	
Bis(2-Chloroisopropyl)Ether	
Bis(2-Ethylhexyl)Phthalate	
4-Bromophenyl Phenyl Ether	
Butylbenzyl Phthalate	
2-Chloronaphthalene	
4-Chlorophenyl Phenyl Ether	
Chrysene	

Compound	Concentration (µg/L)
Dibenzo(a,h)Anthracene	
1,2-Dichlorobenzene	
1,3-Dichlorobenzene	
1,4-Dichlorobenzene	
3,3'-Dichlorobenzidine	
Diethyl Phthalate	
Dimethyl Phthalate	
Di-n-Butyl Phthalate	
2,4-Dinitrotoluene	
Di-n-Octyl Phthalate	
1,2-Diphenylhydrazine	
Fluoranthene	
Fluorene	
Hexachlorobenzene	
Hexachlorobutadiene	
Hexachlorocyclopentadiene	
Hexachloroethane	
Indeno(1,2,3-cd) Pyrene	
Isophorone	
Naphthalene	
Nitrobenzene	
N-Nitrosodimethylamine	
N-Nitrosodi-n-Propylamine	
N-Nitrosodiphenylamine	
Chlordane	
Phenanthrene	
Pyrene	
1,2,4-Trichlorobenzene	
Aldrin	
Alpha-BHC	
beta-BHC	
gamma-BHC	
delta-BHC	
4,4'-DDT	
4,4'-DDE	
4,4'-DDD	
Dieldrin	
alpha-Endosulfan	
beta-Endosulfan	
Endosulfan Sulfate	
Endrin	
Endrin Aldehyde	

Compound	Concentration (µg/L)
Heptachlor	
Heptachlor Epoxide	
PCBs	
Toxaphene	

**SWRCB Minimum Levels in ppb (µg/L)**

The Minimum Levels (MLs) in this appendix are for use in reporting and compliance determination purposes in accordance with section 2.4 of the State Implementation Policy. These MLs were derived from data for priority pollutants provided by State certified analytical laboratories in 1997 and 1998. These MLs shall be used until new values are adopted by the SWRCB and become effective. The following tables (Tables 2a - 2d) present MLs for four major chemical groupings: volatile substances, semi-volatile substances, inorganics, and pesticides and PCBs.

Table 2a - VOLATILE SUBSTANCES*	GC	GCMS
1,1 Dichloroethane	0.5	1
1,1 Dichloroethene	0.5	2
1,1,1 Trichloroethane	0.5	2
1,1,2 Trichloroethane	0.5	2
1,1,2,2 Tetrachloroethane	0.5	1
1,2 Dichlorobenzene (volatile)	0.5	2
1,2 Dichloroethane	0.5	2
1,2 Dichloropropane	0.5	1
1,3 Dichlorobenzene (volatile)	0.5	2
1,3 Dichloropropene (volatile)	0.5	2
1,4 Dichlorobenzene (volatile)	0.5	2
Acrolein	2.0	5
Acrylonitrile	2.0	2
Benzene	0.5	2
Bromoform	0.5	2
Bromomethane	1.0	2
Carbon Tetrachloride	0.5	2
Chlorobenzene	0.5	2
Chlorodibromo-methane	0.5	2
Chloroethane	0.5	2
Chloroform	0.5	2
Chloromethane	0.5	2
Dichlorobromo-methane	0.5	2
Dichloromethane	0.5	2
Ethylbenzene	0.5	2
Tetrachloroethene	0.5	2
Toluene	0.5	2
Trans-1,2 Dichloroethylene	0.5	1
Trichloroethene	0.5	2
Vinyl Chloride	0.5	2

\*The normal method-specific factor for these substances is 1; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

Table 2b - SEMI-VOLATILE SUBSTANCES*	GC	GCMS	LC	COLOR
1,2 Benzantracene	10	5		
1,2 Dichlorobenzene (semivolatile)	2	2		
1,2 Diphenylhydrazine		1		
1,2,4 Trichlorobenzene	1	5		
1,3 Dichlorobenzene (semivolatile)	2	1		
1,4 Dichlorobenzene (semivolatile)	2	1		
2 Chlorophenol	2	5		
2,4 Dichlorophenol	1	5		
2,4 Dimethylphenol	1	2		
2,4 Dinitrophenol	5	5		
2,4 Dinitrotoluene	10	5		
2,4,6 Trichlorophenol	10	10		
2,6 Dinitrotoluene		5		
2- Nitrophenol		10		
2-Chloroethyl vinyl ether	1	1		
2-Chloronaphthalene		10		
3,3' Dichlorobenzidine		5		
3,4 Benzofluoranthene		10	10	
4 Chloro-3-methylphenol	5	1		
4,6 Dinitro-2-methylphenol	10	5		
4- Nitrophenol	5	10		
4-Bromophenyl phenyl ether	10	5		
4-Chlorophenyl phenyl ether		5		
Acenaphthene	1	1	0.5	
Acenaphthylene		10	0.2	
Anthracene		10	2	
Benzidine		5		
Benzo(a) pyrene(3,4 Benzopyrene)		10	2	
Benzo(g,h,i)perylene		5	0.1	
Benzo(k)fluoranthene		10	2	
bis 2-(1-Chloroethoxyl) methane		5		
bis(2-chloroethyl) ether	10	1		
bis(2-Chloroisopropyl) ether	10	2		
bis(2-Ethylhexyl) phthalate	10	5		
Butyl benzyl phthalate	10	10		
Chrysene		10	5	
di-n-Butyl phthalate		10		
di-n-Octyl phthalate		10		
Dibenzo(a,h)-anthracene		10	0.1	
Diethyl phthalate	10	2		
Dimethyl phthalate	10	2		
Fluoranthene	10	1	0.05	

Table 2b - SEMI-VOLATILE SUBSTANCES*	GC	GCMS	LC	COLOR
Fluorene		10	0.1	
Hexachloro-cyclopentadiene	5	5		
Hexachlorobenzene	5	1		
Hexachlorobutadiene	5	1		
Hexachloroethane	5	1		
Indeno(1,2,3,cd)-pyrene		10	0.05	
Isophorone	10	1		
N-Nitroso diphenyl amine	10	1		
N-Nitroso-dimethyl amine	10	5		
N-Nitroso -di n-propyl amine	10	5		
Naphthalene	10	1	0.2	
Nitrobenzene	10	1		
Pentachlorophenol	1	5		
Phenanthrene		5	0.05	
Phenol **	1	1		50
Pyrene		10	0.05	

\* With the exception of phenol by colorimetric technique, the normal method-specific factor for these substances is 1,000; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 1,000.

\*\* Phenol by colorimetric technique has a factor of 1.

Table 2c – INORGANICS*	FAA	GFAA	ICP	ICPMS	SPGFAA	HYDRIDE	CVA A	COLOR	DCP
Antimony	10	5	50	0.5	5	0.5			1,000
Arsenic		2	10	2	2	1		20	1,000
Beryllium	20	0.5	2	0.5	1				1,000
Cadmium	10	0.5	10	0.25	0.5				1,000
Chromium (total)	50	2	10	0.5	1				1,000
Chromium VI	5							10	
Copper	25	5	10	0.5	2				1,000
Cyanide								5	
Lead	20	5	5	0.5	2				10,000
Mercury				0.5			0.2		
Nickel	50	5	20	1	5				1,000
Selenium		5	10	2	5	1			1,000
Silver	10	1	10	0.25	2				1,000
Thallium	10	2	10	1	5				1,000
Zinc	20		20	1	10				1,000

\* The normal method-specific factor for these substances is 1; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

Table 2d – PESTICIDES – PCBs*	GC
4,4'-DDD	0.05
4,4'-DDE	0.05
4,4'-DDT	0.01
a-Endosulfan	0.02
a-Hexachloro-cyclohexane	0.01
Aldrin	0.005
b-Endosulfan	0.01
b-Hexachloro-cyclohexane	0.005
Chlordane	0.1
d-Hexachloro-cyclohexane	0.005
Dieldrin	0.01
Endosulfan Sulfate	0.05
Endrin	0.01
Endrin Aldehyde	0.01
Heptachlor	0.01
Heptachlor Epoxide	0.01
Lindane(g-Hexachloro-cyclohexane)	0.02
PCB 1016	0.5
PCB 1221	0.5
PCB 1232	0.5
PCB 1242	0.5
PCB 1248	0.5
PCB 1254	0.5
PCB 1260	0.5
Toxaphene	0.5

\* The normal method-specific factor for these substances is 100; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 100.

### **Techniques:**

GC - Gas Chromatography

GCMS - Gas Chromatography/Mass Spectrometry

HRGCMS - High Resolution Gas Chromatography/Mass Spectrometry (i.e., EPA 1613, 1624, or 1625)

LC - High Pressure Liquid Chromatography

FAA - Flame Atomic Absorption

GFAA - Graphite Furnace Atomic Absorption

HYDRIDE - Gaseous Hydride Atomic Absorption

CVAA - Cold Vapor Atomic Absorption

ICP - Inductively Coupled Plasma

ICPMS - Inductively Coupled Plasma/Mass Spectrometry

SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)

DCP - Direct Current Plasma

COLOR - Colorimetric

### **MONITORING AND REPORTING REQUIREMENTS FOR THE POLICY**

The following information must be included in the monitoring reports.

1. **Laboratory Requirements.** The laboratory analyzing the monitoring samples shall be certified by the Department of Health Services in accordance with the provisions of Water Code Section 13176 and **must include** quality assurance/quality control data with their reports.
2. **Minimum Levels (ML).** The minimum levels are in accordance with the values listed in Tables 2a through 2d.
3. **Method Detection Limit (MDL).** The method detection limit for the laboratory shall be determined by the procedure found in 40 Code of Federal Regulations (CFR) Part 136 (revised as of May 14, 1999).
4. **Reporting Protocols.** The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols (Policy §2.4.4):
  - a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
  - b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
  - c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory, if such information is available, may include numerical estimates of the data quantity for the reported result. Numerical estimates of data quantity may be percent accuracy ( $\pm$  a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
  - d. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.
5. **Data Format.** The monitoring report shall contain the following information for each pollutant:
  - a. The name of the pollutant.
  - b. The analytical results of the effluent monitoring.
  - c. The applicable Minimum Level (ML) as specified in Tables 2a through 2d.
  - d. The laboratory's current Method Detection Limit (MDL), as determined by the procedure found in 40 CFR Part 136 (revised as of May 14, 1999).
  - e. The measured or estimated concentration.
  - f. The analytical results for the 2,3,7,8-TCDD congeners shall include the quantifiable limit (Implementation Policy, p. 28), and the MDL, and the measured or estimated concentration. Additionally, each measured or estimated congener concentration shall be multiplied by its respective TEF value and the sum of these values reported. Each individual value shall also be reported.



**Example of Data Format.**

Discharger:\_\_\_\_\_

Contact Name:\_\_\_\_\_

Phone Number:\_\_\_\_\_

Sample ID \_\_\_\_\_

Sample location \_\_\_\_\_

Name of Laboratory:\_\_\_\_\_

Laboratory Contact:\_\_\_\_\_

Phone Number:\_\_\_\_\_

Name of Constituent	Date Sample Collected	Date Sample Analyzed	USEPA Method Used	Analytical Results (ug/L)	ML (ug/L)	MDL (ug/L)	RDL (ug/L)	Comments
1,1 Dichloroethane								
1,1 Dichloroethene								
1,1,1 Trichloroethane								
1,1,2 Trichloroethane								
1,1,2,2 Tetrachloroethane								
1,2 Dichlorobenzene (volatile)								
1,2 Dichloroethane								
1,2 Dichloropropane								
1,3 Dichlorobenzene (volatile)								
1,3 Dichloropropene (volatile)								
1,4 Dichlorobenzene (volatile)								
Acrolein								
Acrylonitrile								
Benzene								
Bromoform								
Bromomethane								
Carbon Tetrachloride								

Name of Constituent	Date Sample Collected	Date Sample Analyzed	USEPA Method Used	Analytical Results (ug/L)	ML (ug/L)	MDL (ug/L)	RDL (ug/L)	Comments
<b>VOLATILE POLLUTANTS</b>								
Chlorobenzene								
Chlorodibromo-methane								
Chloroethane								
Chloroform								
Chloromethane								
Dichlorobromo-methane								
Dichloromethane								
Ethylbenzene								
Tetrachloroethene								
Toluene								
Trans-1,2 Dichloroethylene								
Trichloroethene								
Vinyl Chloride								
<b>SEMI – VOLATILE POLLUTANTS</b>								
1,2 Benzanthracene								
1,2 Dichlorobenzene (Semivolatile)								
1,2 Diphenylhydrazine								
1,2,4 Trichlorobenzene								
1,3 Dichlorobenzene (Semivolatile)								
1,4 Dichlorobenzene (Semivolatile)								
2 Chlorophenol								
2,4 Dichlorophenol								
2,4 Dimethylphenol								
2,4 Dinitrophenol								

Name of Constituent	Date Sample Collected	Date Sample Analyzed	USEPA Method Used	Analytical Results (ug/L)	ML (ug/L)	MDL (ug/L)	RDL (ug/L)	Comments
2,4 Dinitrotoluene								
2,4,6 Trichlorophenol								
2,6 Dinitrotoluene								
2-Nitrophenol								
2-Chloroethyl vinyl ether								
2-Chloronaphthalene								
3,3' Dichlorobenzidine								
3,4 Benzoanthracene								
4 Chloro-3-methylphenol								
4,6 Dinitro-2-methylphenol								
4-Nitrophenol								
4-Bromophenyl phenyl ether								
4-Chlorophenyl phenyl ether								
Acenaphthene								
Acenaphthylene								
Anthracene								
Benzidine								
Benzo (a) pyrene(3,4 Benzopyrene)								
Benzo (g,h,i) perylene								
Benzo (k) fluoranthene								
bis 2-(1-Chloroethoxyl methane								
bis(2-Chloroethyl) ether								
Bis(2-Chloroisopropyl) ether								
Bis(2-Ethylhexyl)								

Name of Constituent	Date Sample Collected	Date Sample Analyzed	USEPA Method Used	Analytical Results (ug/L)	ML (ug/L)	MDL (ug/L)	RDL (ug/L)	Comments
phthalate								
Butyl benzyl phthalate								
Chrysene								
di-n-Butyl phthalate								
di-n-Octyl phthalate								
Dibenzo(a,h)-anthracene								
Diethyl phthalate								
Dimethyl phthalate								
Fluoranthene								
Fluorene								
Hexachloro-cyclopentadiene								
Hexachlorobenzene								
Hexachlorobutadiene								
Hexachloroethane								
Indeno(1,2,3,cd)-pyrene								
Isophorone								
N-Nitroso diphenyl amine								
N-Nitroso-dimethyl amine								
N-Nitroso-di n-propyl amine								
Naphthalene								
Nitrobenzene								
Pentachlorophenol								
Phenanthrene								
Phenol								
Pyrene								
<b>INORGANICS</b>								

Name of Constituent	Date Sample Collected	Date Sample Analyzed	USEPA Method Used	Analytical Results (ug/L)	ML (ug/L)	MDL (ug/L)	RDL (ug/L)	Comments
Antimony								
Arsenic								
Beryllium								
Cadmium								
Chromium (total)								
Chromium VI								
Copper								
Cyanide								
Lead								
Mercury								
Nickel								
Selenium								
Silver								
Thallium								
Zinc								
<b>PESTICIDES</b>								
4,4'-DDD								
4,4'-DDE								
4,4'-DDT								
a-Endosulfan								
a-Hexachloro-cyclohexane								
Aldrin								
b-Endosulfan								
b-Hexachloro-cyclohexane								
Chlordane								
d-Hexachloro-cyclohexane								
Dieldrin								

Name of Constituent	Date Sample Collected	Date Sample Analyzed	USEPA Method Used	Analytical Results (ug/L)	ML (ug/L)	MDL (ug/L)	RDL (ug/L)	Comments
Endosulfan Sulfate								
Endrin								
Endrin Aldehyde								
Heptachlor								
Heptachlor Epoxide								
Lindane (g-Hexachloro-cyclohexane)								
PCB 1016								
PCB 1221								
PCB 1232								
PCB 1242								
PCB 1248								
PCB 1254								
PCB 1260								
Toxaphene								

Marine Water (receiving water)

Salinity (ppt) \_\_\_\_\_

pH (units) \_\_\_\_\_

Fresh Water (receiving water)hardness (CaCO<sub>3</sub>, mg/L) \_\_\_\_\_

pH (units) \_\_\_\_\_

**Table 3. Toxic Equivalency Factors (TEFs) for 2,3,7,8-TCDD Equivalents**

Congener	TEF
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001